

PATENT SPECIFICATION

1,193,080

NO DRAWINGS.

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AND INVENTION

1,193,080



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COMPLETE SPECIFICATION.

Floor Coverings.

We, COURTAULDS LIMITED, a British Company, of 18, Hanover Square, London, W.1, England, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to floor coverings.

Our Patent Specification No. 1,109,051 describes and claims a floor covering comprising a pile fabric, the pile fibres of which are bonded together with at least 5 per cent by weight on the weight of the pile fabric of a resin which is defined in the said specification as a synthetic polymeric material which is obtained by polymerising one or more polymerisable unsaturated compounds. The specification also describes and claims a process for making the novel floor covering described above comprising applying to the pile fibres of a pile fabric at least 5 per cent by weight on the weight of the pile fabric of a resin as defined (for example in the form of a solution, suspension or emulsion in water) and bonding together the adjacent pile fibres bearing the resin.

We have now found that the process of impregnating a pile fabric with resin as defined in the above-mentioned specification in the form of an aqueous solution, suspension or emulsion may also be applied with beneficial results to woven types of floor coverings, which do not have a pile, based at least in part on natural fibres, the amount of resin applied being at least 5 per cent based on the weight of the floor covering. Among the woven types of floor coverings suitable for use in the present invention are Brussels carpets and mattings consisting of coarse woven fabrics which are based en-

tirely on natural fibres such as jute or sisal or are based partly on natural fibres and partly on synthetic fibres such as the acrylic or viscose rayon fibres specifically designed for carpet use, for example Evlan (Registered Trade Mark). One of the chief benefits conferred on such floor coverings by the resin treatment is improved wear resistance; depending on the choice of resin and the amount applied, the useful life of a jute floor covering may be increased, for example from twice to six times.

The resins which are employed in the process of this invention are polymeric materials as defined in Specification No. 1,109,051 which resins may or may not require a curing treatment after application to the floor covering. Examples of suitable resins which do not require curing are polyvinyl resins such as polyvinyl acetate, polyvinyl alcohol and polyvinyl chloride. Examples of curable resins which may be used are the self-crosslinking acrylic resins.

The resin is applied to the floor covering in the form of a solution, suspension or emulsion in water which is afterwards removed, for example by drying. Such a liquid may be applied by any of the standard methods such as spraying, padding, dipping or foaming from a lick roller. When using methods such as spraying which apply the resin to one side only, the liquid may be applied to the other side as well by a separate operation but in many cases this is not necessary due to penetration of the covering by the liquid applied.

The process of the invention is carried out so that the floor covering retains at least 5 per cent of its weight of the resin, but the amount may advantageously be greater than

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2 1,193,080 2

this, for example from 15 *per cent* to 45 *per cent* by weight.

The invention is illustrated by the following Examples in all of which the fabric used 5 was a woven jute floor covering weighing 27½ ounces per square yard. Percentages are by weight.

EXAMPLE 1

The fabric was impregnated by spraying 10 it on one side only with a 17 *per cent* total solids aqueous emulsion of "Appretan" K503 (a plasticised polyvinyl acetate emulsion, ex Hoechst-Cassella Dyestuffs Limited, "Appretan" being a Trade Mark) so that 17 *per cent* of solids was applied to the fabric. 15 The fabric was then dried at 120°C.

The wearing properties of the resin-treated fabric were compared with those of an untreated fabric using the Tetrapod tester; 20 the useful life of the resin-treated fabric was about twice that of the untreated fabric.

EXAMPLE 2

The fabric was impregnated by spraying 25 it on one side only with a 16 *per cent* total solids aqueous solution of Texilac W602 (a water-soluble thermosetting acrylic resin, ex Scott Bader Limited) containing 0.1 *per cent* of Catalyst W, so that 16 *per cent* of solids was applied to the fabric. The treated 30 fabric was dried at 80°C. for 16 hours and the resin in the fabric was then cured by heating at 150°C. for 5 minutes. As in Example 1, the useful life of the resin-treated fabric was about twice that of the untreated 35 fabric.

EXAMPLE 3

The fabric was impregnated by dipping it

into a 22 *per cent* aqueous emulsion of Vinamul N8600 (an unplasticised polyvinyl acetate, ex Vinyl Products) to give 44 *per cent* of solids on the fabric. "Vinamul" is 40 a Trade Mark. The fabric was dried at 80°C. When tested as described in Example 1 the useful life of the resin-treated fabric was about six times that of the untreated 45 fabric.

WHAT WE CLAIM IS:—

1. A process for the production of a woven floor covering wherein a resin as hereinbefore defined is applied to a woven floor covering which does not have a pile and which is based at least in part on natural fibres in the form of a solution, suspension or emulsion in water so that the covering retains at least 5 *per cent* of its weight of the resin and then removing the water. 50
2. A process as claimed in Claim 1 wherein the covering retains from 15 to 45 *per cent* of its weight of resin. 55
3. A process as claimed in Claim 1 or 2 in which the covering is based entirely on jute. 60
4. A process as claimed in Claim 1 carried out substantially as described in any of the foregoing Examples. 65
5. A woven floor covering which has been produced by the process claimed in any of the preceding claims. 5

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